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Detecting malingered posttraumatic stress disorder using the Morel Emotional Numbing Test-Revised (MENT-R) and the Miller Forensic Assessment of Symptoms Test (M-FAST)

Julia M. Strunk
West Virginia University

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William Fremouw, Ph.D., Chair
B. Kent Parker, Ph.D.
Kevin Larkin, Ph.D.

Department of Psychology

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ABSTRACT

Detecting Malingered Posttraumatic Stress Disorder Using the Morel Emotional Numbing Test-Revised (MENT-R) and the Miller Forensic Assessment of Symptoms Test (M-FAST)

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From feigning psychosis to avoid prosecution to claiming an anxiety disorder to receive disability insurance, people from all socioeconomic and educational backgrounds have been suspected of or found to be malingering (Rogers, 1997). The present study investigated the utility of two assessment measures in detecting malingered PTSD: the Morel Emotional Numbing Test-Revised (MENT-R) and Miller Forensic Assessment of Symptoms Test (M-FAST). The Detailed Assessment of Posttraumatic Stress (DAPS) was used as the criterion variable for the following groups: clinical PTSD, subclinical PTSD, honest responders, and coached malingerers. Total scores on the MENT-R distinguished among the four groups of participants. The three groups responding honestly averaged fewer than 3.5 errors, while malingerers missed over 5 times that number. Scores on the M-FAST were also higher for the group of participants malingering. Although the MENT-R and M-FAST correctly identified 63% and 78% of coached malingerers respectively, the combined use of both measures resulted in the correct classification of over 90% of the participants instructed to malinger PTSD.

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In most clinical settings, the authenticity of an individual's presentation of symptoms is rarely, if ever, questioned. However, psychologists working in forensic settings must consistently evaluate the veracity of information given to them. From feigning psychosis to avoid prosecution of a crime, to claiming an anxiety disorder in order to receive disability assistance, people from all socioeconomic and educational backgrounds have been suspected of or found to be malingering (Rogers, 1997). The *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV-TR; American Psychiatric Association [APA], 2000*)* defines malingering as "the intentional production of false or grossly exaggerated physical or psychological symptoms, motivated by external incentives" (p. 739). Between 15-17% of cases presented in forensic settings have been estimated to involve malingering of symptoms (Rogers & Bender, 2003). When considering both the financial and judicial implications of failing to identify those who are mentally and physically disabled but are attempting to manipulate other individuals or the court, the importance of assessments to detect malingering is clear.

Models of Malingering

Rogers (1997) described three explanatory models of malingering: the pathogenic model, the criminological model, and the adaptational model. The pathogenic model, the oldest of the three, asserts that malingerers are suffering from a mental disorder, and misrepresentation of symptoms provides a means of gaining control or psychologically coping with symptoms that the individual is not capable of controlling or confronting in a constructive way. Evidence of psychologically "normal" malingerers has left this model somewhat useless, as recognition that motivation for secondary gain in the form of money or freedom from criminal responsibility often exists. The criminological model approaches persons who are malingering as inherently

bad and likely to have antisocial personality disorder. In a forensic context, these individuals are seen as being uncooperative and making false claims in order to deceive and manipulate the institution with which they are involved (Rogers, 1997). Because uncooperativeness can be characteristic of individuals with genuine disorders, and malingerers can approach evaluations with an exaggerated sense of compliance, this model has not proven to be useful as well. The adaptational model, proposed by Rogers (1997), considers the context of the situation (adversarial), the possible outcomes of the individual's situation (high stakes), and the lack of alternatives for an individual (nothing to lose). For an individual to consider or engage in malingering, a cost-benefit analysis is performed, and when the preceding conditions exist, as well as the belief that one can successfully get away with feigning a disorder, the decision to malinger is often made. Current approaches to malingering adopt this adaptational model, particularly forensic psychologists, who are most often working in adversarial contexts. Assessments designed to detect malingering, working under the assumption of the adaptational model, should rely less on identifying antisocial personality traits and more on deceptive response styles that may or may not include noncompliance.

Lanyon (1997) distinguishes between traditional models of assessing malingering based on global signs of lying, or nonverbal or physiological clues used to detect deception, versus current cognitive models of malingering that focus on accuracy of knowledge and personally influencing examiners in interviewing contexts, either by overt threats to sue the evaluator or by dramatic efforts to ingratiate oneself with the evaluator. Whereas the global signs of lying model relied on instruments such as the polygraph and clinical observation, current cognitive models now rely on assessing an individual's knowledge of symptoms specific to a particular disorder and comparing one's presentation of symptoms to known groups with the disorder (Lanyon, 1997). Empirical data often yield inconclusive findings when assessing malingering using global

signs of lying approaches, but current research on psychological assessments that tap into cognitive differences show much more promise (Lanyon, 1997).

Rogers and Bender (2003) provide eight detection strategies that can be employed in the clinical assessment of malingering: identification of rare symptoms (hallucinating only in black and white), improbable symptoms (seeing real people but smaller versions), symptom combinations (reporting feelings of grandiosity and increased need for sleep), symptom severity (always hearing voices), indiscriminant symptom endorsement (often endorsing any and all symptoms presented), obvious versus subtle symptoms (not endorsing being easily distracted, a subtle symptom of schizophrenia), erroneous stereotypes (believing people with schizophrenia have memory problems), and reported versus observed symptoms (reporting difficulty sitting still but not observed moving around in chair). These strategies are significant because research and development of clinically useful assessment instruments utilize these strategies in the form of self-report questionnaires or in a structured interview format. Some assessments use these strategies indirectly by providing forced choice items in which one's responses do not match the way known clinical groups actually respond. Lanyon's (1997) cognitive model of symptom knowledge is particularly useful when examining differences in deceptive responding versus honest responding of these detection strategies.

Research Methods

Three research methods are often employed when examining malingering: simulation designs, known-groups comparisons, and differential prevalence designs (Rogers, 1997). Simulation designs are the most common and involve three groups: individuals without a disorder told to malinger a particular disorder, controls chosen from the same nonclinical group told to respond honestly, and a clinical comparison group consisting of individuals who are diagnosed with the disorder in question. In order to increase external validity, small incentives

are often provided for the simulators, such as cash rewards for the “best fakers” (Liljequist, Kinder, & Schinka, 1998; Rogers & Cruise, 1998) or gift certificates to record stores (Calhoun, Earnst, Tucker, Kirby, & Beckham, 2000).

Rogers and Cruise (1998) found that negative incentives caused simulators to be more focused than positive incentives. Negative incentives in this particular study involved failure to receive extra credit and the chance of having names of bad simulators publicly displayed. While negative incentives do replicate conditions of criminal trials more closely, civil litigation often results in obtaining positive incentives, which are also more ethically acceptable in research. Rogers and Cruise (1998) also varied context of the scenario used by the simulators (no context, familiar, or unfamiliar). In the familiar context, participants were presented with a situation in which a person failed to go to a course’s midterm exam because of a relationship break up. Instructions to fake depression so that a university psychologist can get the person “out of this mess” are included. The unfamiliar context involves being arrested for possession of marijuana and drunk driving, with instructions that being diagnosed with major depression would help the person receive treatment instead of prosecution. Relevance of the instructions was also varied, with groups receiving no information, real-world implication information (your tax dollars are spent on people who get away with malingering mental illness), or a personal challenge instruction (most people cannot get away with this) (Rogers & Cruise, 1998). Use of the negative incentive produced more effective, focused malingerers than the positive incentive, with those in the negative condition receiving greater elevations on mood symptoms and lower elevations on other scales. Other significant findings included fewer bogus symptom production from participants offered positive incentives with a familiar scenario than those with no scenario or the unfamiliar scenario. When relevance included a personal challenge instruction and the context was familiar, participants’ scores on the Low Intelligence subscale of the Screening Inventory of

Malingered Symptoms (SIMS) was less elevated than participants who were given no context (Rogers & Cruise, 1998). All three variables, type of incentive, context, and relevance, appear to affect malingering performance.

The simulation design has limitations in its generalizability; however, researchers can take steps to increase external validity. Rogers (1997) provides methodology guidelines for conducting malingering research, including comprehensive, specific instructions for the simulators, a specific context in which all simulators base their malingered presentations on, external incentives to increase motivation, active preparation time for simulators, coaching on the specific disorder under study, and debriefing that includes questions related to believability of the task, comprehension of instructions and coaching materials, and checks on amount of motivation and participation. Rogers (1997) also emphasizes the importance of including a clinical comparison group, while screening for the absence of clinical symptoms among honest controls and malingering simulators.

Known-groups comparisons use individuals in clinical settings who have been identified as suspected malingerers (Rogers, 1997). This group is then compared to individuals with the disorder in question who respond honestly. The benefit of using this design is its applicability to real-world settings and situations. Limitations to this method include correct classification of known groups and accessibility to such populations. Comorbidity with other disorders complicates group classification, and clinicians must use “gold standard” assessments to accurately identify and classify those who are likely malingering and those who have a legitimate diagnosis. “Gold standard” assessments have undergone extensive validation studies, and as a result of sound psychometric properties, they are used as a measure against which new assessments examine their validity. Examples include the Minnesota Multiphasic Personality Inventory (MMPI), the Personality Assessment Inventory (PAI), and the Structured Interview of

Reported Symptoms (SIRS).

The differential prevalence design is a more recent method that is the least methodologically sound (Rogers, 1997). Individuals who are assumed to vary in response style and motivation are grouped and then compared, and no other attempts are made to determine honest versus dishonest responders. For example, individuals who are involved in litigation are assumed to be more likely to malinger than individuals with the same condition who are not involved in litigation, so the two groups are compared on this basis alone (Rogers, 1997). Another example involves veterans seeking disability compensation on the basis of posttraumatic stress disorder (PTSD) claims who are then compared with veterans not seeking claims and/or civilians with PTSD (Frueh, Hamner, Cahill, Gold, & Hamlin, 2000). Rogers (1997) cautions that this design does not allow an investigator to determine prevalence rates for those deliberately distorting symptoms, for identification of individuals who are or who are not malingering within each group, and the difference in performance between those in each group.

Malingering of Posttraumatic Stress Disorder

An area of malingering research that needs further exploration because of its economic, social, and legal ramifications on society is in the area of posttraumatic stress disorder (PTSD). In civil litigation, primarily in personal injury cases, large sums of money are often at stake when persons are held liable for causing a trauma that results in PTSD. In criminal trials, possible reduced sentences, lesser charges, or findings that one is not criminally responsible because of PTSD has dramatic implications for justice and fairness in the United States legal system. PTSD became an official diagnosis in the *DSM-III* and caused immediate concern from clinicians who assessed individuals in forensic settings (Resnick, 1997). Subjective diagnostic criteria and possibilities of secondary gain make PTSD particularly susceptible to malingering. Comorbidity with other disorders and idiographic differences in symptom presentation in true cases of PTSD

further complicate detection of malingerers.

Posttraumatic stress disorder is classified in the *DSM-IV-TR* (APA, 2000) as an anxiety disorder following exposure to a traumatic event that involved witnessing or experiencing "actual or threatened death or serious injury" (Criterion A1) and resulted in a response that involved "intense fear, helplessness, or horror" (Criterion A2) (p. 467). Five other areas follow this first criterion. The next three criteria consist of the following symptoms: *Criterion B:* the reexperiencing of the event (e.g., intrusive thoughts, nightmares, dissociative flashbacks, distress from exposure to cues that resemble the event); *Criterion C:* the avoidance of stimuli associated with the event (e.g., avoidance of thoughts, feelings, and conversations, emotional numbing, inability to recall important aspects of the trauma, feelings of detachment, and restricted range of feelings); and *Criterion D:* persistent hyperarousal (e.g., inability to fall or stay asleep, difficulty concentrating, hypervigilance, exaggerated startle response, and anger outbursts). The last two criteria involve duration, which includes the presence of symptoms for over a month, and functional impairment, which includes significant distress or impairment in social, occupational, or other important areas (APA, 2000).

Lifetime prevalence rates for PTSD in the adult population are approximately 8% (APA, 2001). Lifetime exposure rates for experiencing at least one traumatic event are significantly higher, with estimates around 75% of the adult population (Green & Kaltman, 2003). Of those exposed to such events, rates for individuals who go on to develop PTSD range from 9% to 25%, with higher rates for Vietnam veterans (30%) (Green & Kaltman, 2003). As stated previously, PTSD is highly comorbid with other disorders, such as alcohol abuse or dependence, drug abuse or dependence, major depressive disorder, conduct disorder, and other anxiety disorders. Green and Kaltman (2003) state that 83% of men and 79% of women with PTSD also meet criteria for another disorder.

Although prevalence rates, or percentage of individuals who will receive the diagnosis in a lifetime, for PTSD suggest that it is not an uncommon disorder, prevalence rates for trauma exposure indicate that most individuals do not develop PTSD. When personal gain is a possible outcome from exposure alone, the cost-benefit analysis of Roger's (1997) adaptational model becomes potentially weighted in favor of benefits received from malingering this disorder. One major difficulty in malingering research is the lack of precise prevalence rates, due to limitations in measurement and fluctuations in base rates (Rogers & Salekin, 1998). Rogers et al. (1994) estimated that in non-forensic settings, clinicians encounter a 7.4% prevalence rate of malingering, compared to 15.7% of clinicians in forensic settings. These estimates of malingering rates are based on clinical judgment and not actual test data, such as SIRS scores or validity scale scores on the MMPI. Incidence rates, or percentage of individuals who will receive the diagnosis in any given year, also vary widely based on the location of the assessment and the evaluator (Resnick, 1997).

An important component of malingered PTSD involves access to information regarding symptoms and assessment measures. Numerous studies acknowledge the accessibility of specific *DSM-IV-TR* criteria for PTSD (Bury & Bagby, 2002; Resnick, 2003; Rogers, 1997; Ruiz, Drake, Glass, Marcotte, & van Gorp, 2002). A simple search using a search engine on the Internet yields vast amounts of information on PTSD symptoms, assessment measures, and questions clinicians will likely ask in evaluating for the disorder. This availability of information on PTSD has lead researchers to include aspects of coaching in malingering simulation studies. At the extreme end of the spectrum, professional actors have been trained in PTSD presentation and gained admission into an evaluation and treatment study (Hickling, Blanchard, Mundy, & Galovski, 2002). Other studies have provided subjects with both information on PTSD symptom criteria and validity scales (Bury & Bagby, 2002; Guriel, Yanez, Fremouw, Shreve-Neiger, Ware,

Filcheck, & Farr, 2004), and numerous studies have provided subjects with lists of *DSM-IV-TR* (APA, 2000) criteria prior to simulated malingering (Rogers, Kropp, Bagby, & Dickens, 1992; Hickling et al., 1999). Some studies have allowed continuous access to the PTSD symptom lists (Liljequist et al., 1998; Calhoun et al., 2000), while others include instructions on believability (cautioning against over-reporting symptoms) (Scragg, Bor, & Mendham, 2000). Because individuals in clinical or applied settings do not have constant access to symptoms lists, Rogers (1997) suggests not allowing subjects to review material during the study. Instead, subjects should be tested on the material afterward in order to ensure comprehension and attention to instructions. The use of coaching strategies, whether extensive or limited, improves external validity and generalizability of simulation studies. Attorneys, television, the media, and the Internet all provide fast, simple access to vast amounts of information concerning posttraumatic stress disorder, an access that is likely to increase in the future.

Assessments Used to Identify Malingered PTSD

Psychological tests created and used to diagnosis PTSD have been found highly susceptible to malingering (Resnick, 1997; Keane, Buckley, & Miller, 2003). Symptom checklists appear to be especially open to deception, even among subjects given no prior training in PTSD symptoms (Lees-Haley & Dunn, 1994). In a study using the Post-traumatic Symptom Scale Self Report, Burges and McMillan (2001) found that 94% of naïve subjects told to malinger checked the symptoms of PTSD and met criteria. In spite of the addition of 'bogus' items on the checklist that are not characteristic of PTSD, 90% of naïve subjects still satisfied *DSM-IV* criteria for PTSD. Using the SCL-90-R, Lees-Haley (1989) found the 100% of 52 untrained subjects successfully malingered emotional distress to levels of psychopathology.

In addition to symptom checklists, self-report inventories are also used frequently in assessing PTSD, the Minnesota Multiphasic Personality Inventory-2 (MMPI-2) and the

Personality Assessment Inventory (PAI) are among the most popular. Both measures benefit from validity scales that are designed to detect dishonest or random responding. The validity scales, while not completely accurate in detecting deceptive responding, do assist clinicians in determining questionable presentations of symptoms. For example, the MMPI-II includes validity scales that measure atypical, deviant responding (*F*, Infrequency Scale), unrealistic positive responding (*L*, Lie, Scale), and a similar but more subtle correction scale (*K*, Correction Scale) for socially desirable, positive responding (Groth-Marnat, 2003). In addition, the Psychopathology Infrequency Scale (*F*p) has been found to be particularly helpful in identifying deceptive responding in simulated malingering research (Bury & Bagby, 2002).

Validity scales on the PAI used to assess malingering are Negative Impression Management (NIM) scale, the Malingering Index, and the Rogers Index, the last two examining features of the entire PAI profile (Scragg, Bor, & Mendham, 2000). Specificity of the PAI, or accuracy at correctly identifying honest responders (thus failing to misclassify honest responders as malingering), has been found to be high with the use of recommended cutoff scores (Liljequist et al., 1998; Scragg et al., 2000). Studies using the validity scales on the MMPI-2 to detect malingered PTSD have also found high rates of positive predictive power (Bury & Bagby, 2002; Lewis, Simcox, & Berry, 2002; Morel, 1998). In particular, scales used to assess inconsistent responding and symptom exaggeration appear to be effective at detecting possible deception (Fox, Gerson, & Lees-Haley, 1995; Lewis et al., 2002).

Guriel and Fremouw (2003) recently reviewed assessments used to detect malingered posttraumatic stress disorder and found the validity scales of the MMPI, the MMPI-2, and the PAI to be promising in detecting a deceptive response style. The Trauma Symptom Inventory (TSI; Briere, 1995) is the only PTSD-specific measure to contain validity scales to assess atypical responding and possible malingering. The three validity scales on the TSI include

Response Level (RL) scale, which measures a defensive response style, Inconsistency (INC) scale, which measures random responding or indicates cognitive impairment, and the Atypical Responding (ATR) scale, which measures endorsement of items that were rarely endorsed by a normative sample (Briere, 1995). Edens, Otto, and Dwyer (1998) found high specificity, or accuracy of identifying honest responders (92%) and positive predictive power using a cutoff score of 61 on the ATR scale, and good sensitivity (81%) in detecting deceptive responding in a group of coached college students compared to multiple psychiatric groups.

Recently, the Detailed Assessment of Posttraumatic Stress (DAPS; Briere, 2001), a 104-item, self-report questionnaire, has been developed as a refinement of the TSI. Briere (2001) included the three symptom clusters from the *DSM-IV-TR* (APA, 2000) as Posttraumatic Stress scales in the DAPS to assist in the diagnosis of PTSD from test profiles. In addition, the DAPS was normed on a sample of over 400 individuals from the population who had been exposed to trauma in the past, whereas the normative sample of the TSI was not screened for trauma exposure. Two validity scales are also included on the DAPS, Positive Bias and Negative Bias. Due to the DAPS recent publication, these scales have not been tested beyond initial validation studies and await further development.

Rogers et al. (1992) examined the effectiveness of the Structured Interview of Reported Symptoms (SIRS), the 172-item “gold standard” structured interview designed to assess deceptive response styles, in detecting malingered PTSD, schizophrenia, and mood disorders. The SIRS was able to adequately distinguish feigned disorders; however, no known group of individuals with PTSD was used, so results do not indicate that the SIRS can distinguish genuine from feigned PTSD. A screening instrument for malingered mental illness has recently been developed as an abbreviated version of the SIRS, the Miller Forensic Assessment of Symptoms Test (M-FAST; Miller, 2001). The M-FAST is a brief, 25-item structured interview that assesses

malingering of psychotic symptoms based on overall response style. Initial studies have found that the M-FAST is successful at detecting malingering in known groups comparisons. Outpatient disability claimants who were suspected of malingering based on elevated SIRS scores had significantly higher total M-FAST scores than honest responders (Miller, Guy, & Davila, 2000). In a separate study, malingerers from a maximum-security penitentiary were identified by elevated SIRS scores and also received significantly higher M-FAST scores than a group of prisoners without elevated SIRS scores, considered to be honest responders (Guy & Miller, 2000). In a simulation design, Guriel et al. (2004) found that the M-FAST and TSI had a combined detection rate of over 90% of malingered posttraumatic stress symptoms. Both instruments had adequate sensitivity in identifying deceptive responders; 68% of simulators were detected from high overall M-FAST scores, and 70% of simulators were detected because at least one TSI validity scale was elevated.

Guriel and Fremouw (2003) also reviewed the use of projective tests and psychophysiological assessments and found that the one study utilizing the Rorschach produced inconsistent results, as did the psychophysiological studies, with one group of simulators being able to fake PTSD-like heart rates while another group was not able to produce similar physiologic profiles. Both of these studies used veterans as subjects, a common strategy in PTSD research. A further complication in assessing for malingered PTSD arises because symptom over-reporting has been found in combat veterans presenting with PTSD (Frueh, Gold, & Arellano, 1997; Frueh et al., 2000).

One technique examined in Guriel and Fremouw's (2003) review that holds particular promise as a specific assessment instrument for malingered PTSD is the Morel Emotional Numbing Test (MENT). This surprisingly under-studied assessment instrument was created in 1998 and validated using four groups of military veterans. The MENT is a 60-item, two-

alternative, forced-choice test that detects response bias with items that have no face validity (Morel, 1998). The test is based on the assumption that individuals who score poorly on this simple test of identifying emotions from facial expression will do so because they are told that individuals with genuine PTSD are unable to correctly identify emotional expressions. This test utilizes Roger and Bender's (2003) detection strategy of erroneous stereotypes. Malingerers poor performance on the MENT is a result of a misconception about the effects of emotional numbing on individuals with PTSD, which entails personally feeling numb but not an inability to recognize emotions in others. To create this erroneous stereotype, Morel (1998) includes instructions on the MENT that state, "Some individuals with posttraumatic stress disorder (PTSD) may have difficulty recognizing facial expressions" (p. 305).

Morel (1998) demonstrated that veterans with legitimate presentations of PTSD had a mean error rate of 2.41 on the MENT (*SD* = 1.66), whereas individuals suspected of malingering, based on an elevated *F* - *K* index score on the MMPI-2 (cutoff of greater than or equal to 15), had a mean error rate of 17.77 (*SD* = 8.53). Another strength of this study was Morel's use of a known groups comparison design that included not only veterans with legitimate diagnoses of PTSD and suspected PTSD malingerers, but also 4 other clinical groups: non-PTSD veterans, older veterans without PTSD, inpatients being treated for chemical dependence, and inpatients being treated for schizophrenia (Morel, 1998). Each group consisted of 17 participants, totaling 102 subjects. A cutoff score of 9 was suggested for greatest predictive power. This score was determined by adding one standard deviation to the mean error rate of the MENT for the group of patients with schizophrenia. For the outpatient disability claimant groups, the utility of the cutoff score was calculated by examining the percentage of participants correctly classified as honest responders or malingerers on the basis of comparing the MENT cutoff score (9) and the MMPI-2 cutoff score on the *F – K* index (greater than or equal to 15). The sensitivity of the

MENT to correctly identify suspected malingerers was 82%, and the specificity of the MENT to identify genuine responders was 100%. When a MENT score exceeded the cutoff score of 9 and the *F – K* Index score was equal to or above 15, the predictive power of the MENT was 100%. For participants with scores less than 9 on the MENT and less than 15 on the *F – K* Index, the predictive power was 94.4%. The overall hit rate on the MENT was 95.6% (Morel, 1998). At this time, no known study has attempted to replicate or extend these promising findings.

Rationale

Morel's Emotional Numbing Test (MENT) appears to hold much promise as a clinically useful assessment instrument for detecting malingered PTSD. Despite high levels of sensitivity and specificity, further validation of its use has not been examined. In addition to its psychometric properties, the MENT has several other advantages. First, a forced choice format is utilized, requiring individuals to make an unambiguous selection that can be compared to other individuals. This format indirectly utilizes Lanyon's (1997) cognitive model of symptom knowledge in that malingerers have been found to respond differently than individuals with PTSD, who do not have difficulty recognizing emotional expressions (Morel, 1998). Second, the test employs an "erroneous stereotype" detection strategy, as described by Rogers and Bender (2003), a less obvious strategy that is likely to maximize true positives and minimize false positives. A third advantage is that even among individuals who have received coaching or have researched PTSD themselves, the basis of the test, emotional numbing, is somewhat tied to the disorder. Thus, malingerers may know that individuals with PTSD can experience numbing as a form of avoidance; however, this emotional numbing is personal and at this point has not shown to extend to interpretation of others' emotions. This distinction is most likely not known by malingerers. Last, the MENT does not require a verbal response; individuals can circle or point to their choice. Difficulties in detecting deception among non-English speaking persons are

abundant (Mayers, 1995). However, even instructions for the MENT are simple and use minimal English, making this test an appealing assessment instrument for clinicians evaluating non-native English speakers as well.

Design

The Morel Emotional Numbing Test for PTSD (MENT) was designed and validated using a veteran population. The present study used the basic stimulus materials while expanding and revising them to apply to a civilian population. Another assessment for malingered mental illness, the Miller Forensic Assessment of Symptoms Test (M-FAST), has also been found to be clinically useful with a variety of populations (Miller, Guy, & Davila, 2000). This recognized screening measure for the detection of malingered psychotic symptoms has been examined using a PTSD population in only one study at this time (Guriel et al., 2004), and the present study also examined its ability to detect malingered PTSD. The Detailed Assessment of Posttraumatic Stress (DAPS) was the criterion variable used to define groups and determine severity ratings. Validity scales on the DAPS served to identify legitimate presentations of the presence or absence of PTSD.

The present study employed a simulation design, using a college population with an independent variable of group membership: honest responders (controls), coached malingerers, and clinical PTSD responders. Dependent variables were scores obtained on the M-FAST, the MENT-R, and the PTSD Checklist Civilian Version (PCL: CV), and the resulting malingering classification rates of these measures.

Hypotheses

1. Based on validation studies of the M-FAST (Guy & Miller, 2000; Miller, Guy & Davila, 2000), it was hypothesized that honest controls would have significantly lower raw mean scores on the M-FAST than the coached malingerers. Honest controls were also expected to make

fewer, if any, errors on the MENT-R, as evidenced by the findings of Morel (1998). Means and standard deviations, calculated for each group's scores, were examined, and an analysis of variance (ANOVA) was conducted to examine differences between groups on the M-FAST scores and the MENT-R scores.

2. The PTSD responders were hypothesized to have significantly higher mean M-FAST scores than honest controls due to potential comorbid conditions associated with PTSD, such as depression and substance abuse. Raw scores on the MENT-R (number of errors) were not expected to be significantly different between the PTSD groups and honest control groups (Morel, 1998). An ANOVA was used to test for between groups differences.

3. Scores on the M-FAST were not predicted to be significantly different between the PTSD responders and the coached malingerers due to possible comorbid disorders with PTSD, but raw scores on the MENT-R (number of errors) were expected to be significantly greater for the coached malingerers than the PTSD groups (Morel, 1998). An ANOVA was used to test for between groups differences.

4. It was hypothesized that M-FAST scores would not contribute to the prediction of MENT-R error scores due to comorbidity of other disorders and PTSD. A simple regression was performed on the data to determine contribution of M-FAST scores in predicting MENT-R error scores. Extraneous variables such as age and education were examined using Pearson product-moment correlations.

5. It was predicted that coached malingerers would be detected using an M-FAST cut score greater than five (Guy & Miller, 2000; Miller, Guy & Davila, 2000) and a MENT-R score greater than nine (Morel, 1998). Sensitivity and specificity of the M-FAST and the MENT-R were examined using the PTSD responders' and the malingerers' scores.

6. An item analysis of M-FAST questions endorsed by the PTSD group was conducted in order

to identify comorbid items that may elevate overall scores.

Method

Participants

Participants initially consisted of 192 students from West Virginia University currently enrolled in psychology classes. Participation resulted in extra credit for class. Twenty three participants were excluded from the study for the following reasons: 14 individuals received elevated Negative Bias scores on the DAPS, invalidating their clinically elevated total scores; 3 marked on the post-questionnaire that they did not respond as instructed; 2 revealed group condition to a test administrator masked to placement; 2 were classified incorrectly due to research error; 1 verbally reported to the masked test administrator that he/she was not responding as instructed; and 1 misunderstood the MENT-R instructions, responding in a uniform way throughout the subtest. After these omissions, 169 students remained.

Participants were screened using the Detailed Assessment of Posttraumatic Stress (DAPS). Those with elevated, valid Posttraumatic Stress Total (PTS-T) subscale scores of 59 or higher were placed in a clinical PTSD group. Briere (2001) assigned numerical values for the classification of low (0-36), moderate (37-58), and severe (59 or higher) PTS-T levels. Several weeks into the study, the investigator noticed that a significant number of participants were falling into the moderate category and were describing less severe traumas than those in the high category; therefore, groups were expanded to include two clinical groups, one classified as the high, or clinical PTSD group, and the other as the moderate, or subclinical PTSD group. Participants who did not endorse experiencing any traumas or who fell in the low range were randomly assigned to either a control group who was asked to complete the measures honestly, just as the clinical groups responded, or a coached malingering group who was asked to complete the assessment measures as if attempting to receive a diagnosis of PTSD. The four groups were

clinical PTSD (*n* = 24), subclinical PTSD (*n* = 65), honest controls (*n* = 39), and coached malingerers (*n* = 41).

In order to obtain a more equal number of participants in each group to increase power, minimize group variance, and distribute weight to each group more equally, 41 participants were randomly selected using SPSS from the subclinical PTSD group. The selected group was compared to the full group for age, gender, race, year in school, and psychiatric history differences and was found to be highly similar. A total of 145 students comprised the final sample. Participants' average age was 19.36 years; 79.3% were female, and 20.7% were male. The majority of participants were classified as freshmen (50.3%). Participants also included those classified as sophomores (30.3%), juniors (11.7%), seniors (4.8%), and 5th year seniors or beyond (2.8%). Most of the students were Caucasian (87.6%); however, other races of participants included Hispanic (5.5%), Black (4.1%), Asian (1.4%), Native American (.7%), and Other (.7%). Race, gender, age, and year in school demographics by group placement are summarized in Table 1. Participants in the coached malingering group were offered $25.00 for successful malingering (avoiding detection on the M-FAST and MENT-R and obtaining clinically elevated scores on the PCL: CV). Participants in the other groups, all of which were asked to respond honestly, were placed in a lottery to win $25.00. A total of eight participants were paid $25.00, four individuals from the malingering group and four individuals randomly selected from the three honest groups. Participants from the honest groups were included in a lottery so that random assignment or clinical levels of PTSD did not prevent individuals from having the opportunity to receive a monetary reward.

Measures

Description of the MENT. The MENT (Morel, 1998) is a symptom validity test using a forced-choice format that relies on below-chance failing and floor effect. It was developed by

photographing two dramatic arts students displaying 18 emotions using facial expressions. Sixteen military veterans rated the 18 expressions and emotions, and the 10 photographs with the highest level of agreement were selected for the test. In Set 1, individuals are shown 20 separate photographs of a person whose face is expressing an emotion. Two words describing emotions are listed at the bottom of the page, and instructions are to match the description to the facial expression. Ten different emotional expressions are used, each one twice. Words are selected in such a way as to make identification extremely easy. For example, a face that is frowning with downcast eyes is matched with the words “sad” and “excited.” In Set 2, a descriptive emotional word is listed at the top of a page, along with two photographs. The words are the same ones used in Set 1, and the individual is instructed in the same way to select the photograph that most closely represents an expression of that word. A total of 20 items are included in this set, representing ten descriptive emotional expressions; each word is used twice. As in Set 1, words are selected so that identification is not difficult. In Set 3, two different photographs of facial expressions are on a page along with two descriptive words, and an individual matches each word to the correct expression. Twenty items are used in this set as well, with varying combinations of the same 10 emotions. The test takes approximately 5 to 10 minutes to administer. Those taking the test circle their answers on an answer sheet, and total score is number of errors. No feedback is given during administration of the MENT (Morel, 1998).

In Morel’s (1998) study, instructions were as follows for Set 1:

> “Some individuals with posttraumatic stress disorder (PTSD) may have difficulty recognizing facial expressions. This test is designed to assess how well you are able to identify different facial expressions. I will show you some photographs, one at a time, showing different facial expressions and I would like you to look at them carefully. Below each photograph you will see two words. I want to see if you are able to match the

correct word that states the expression shown in the photograph. You are to guess if you are not sure" (p. 305).

Instructions for Set 2 were as follows:

"On this next test you will see only one word. Below the word will be two photographs. I want to see if you are able to recognize the facial expressions; however, this time you have to select the correct photograph that matches the word" (p. 305).

Instructions for Set 3 were as follows:

"On this final set you will see two photographs. Below the photographs will be two words. I want to see if you are still able to recognize the facial expressions; however, this time you will have to correctly match two photographs with two words" (p. 305).

Development of the MENT-R. In order to expand the procedure of the MENT (Morel, 1998) to a civilian population, Ekman and Friesen's (1976) Pictures of Facial Affect (PoFA) were used as models of the emotional expressions. These pictures were developed by training posers to contract or relax certain facial muscles that accompany one of six facial expressions: happiness, sadness, fear, anger, disgust, and surprise. Instead of posing on the basis of a particular emotion, these individuals focused on activating the trained muscle responses (Ekman & Friesen, 1976). Hundreds of photographs were taken, and empirical studies using college students determined which photographs consistently matched judgments of emotional expressions. Fourteen posers were selected for the final set; of the 110 photographs, all but 11 were correctly matched by raters more than 80% of the time. All photographs were rated as showing the intended emotion by at least 70% of the raters, and 59 were correctly matched by more than 90% of the raters.

Instructions for the MENT-R were modified slightly from Morel's (1998) study in order to most accurately explain the testing procedure due to a pilot participant not understanding the

instructions as worded on the MENT (Morel, 1998). The order of instructional set was also changed. Instructions for Set 1 were as follows:

> Some individuals with posttraumatic stress disorder (PTSD) may have trouble recognizing facial expressions. This test is designed to access how well I am able to identify different facial expressions. I will view three sets of photographs. On the first set of items, I will see two words beside each photograph. I am to look at each photograph carefully and match the correct word, designated with an A or B, that states the expression shown in the photograph. I am to guess if I am not sure. I will not receive any feedback about my responses being correct or incorrect throughout the test.

Instructions for Set 2 were as follows:

> On this next set of items, I will see only one word. Below each word will be two photographs. I am to look at each photograph carefully and select the correct photograph, designated with an A or B, that matches the word.

Instructions for Set 3 were as follows:

> On this final set, I will see two photographs. Above the photographs will be two words. I am to read the emotional appearing first, on the top left panel, and tell which picture, either A or B, correctly matches that word. Then, I will read the emotion on the top right panel and the correct corresponding letter.

Instructions were typed on card stock, cut to the appropriate size, and placed in front of the set of corresponding photographs. Participants were asked to read each instructional set out loud to the examiner in order to focus attention and concentration on the wording.

Because only six emotions were used in the MENT-R, as compared to 10 emotions in the MENT, each emotion was selected more times. In order for each emotion to appear an equal number of times, items were expanded to 72 test items instead of 60; there were 24 items per set

of instructions with each emotion being the correct response four times per instructional set. The experimenter selected eight posers, four female and four male. For the two sets of instructions requiring pairings of photographs (Set 2 and Set 3), the pictures were first arranged according to mathematical possible combinations with each emotion being numbered; for example, happy was a 1, and sad was a 2. Then, the photographs were paired such that 1-2 (happy and sad), 1-3 (happy and fear) and so on, totaling 15. The remaining 9 items were randomly paired together. Photograph pairs were carefully monitored and arranged so that two posers were not paired together frequently, the same poser was not presented consecutively, and emotions did not follow the numerical ordering upon which they were created. Males and females were paired together, so that two females and two males were never presented at the same time in order to control for possible gender effects. For the instruction set presenting only a single photograph (set 1), a matrix was constructed to ensure a random and non-overlapping presentation of facial expressions. Males and females were presented in an alternating format.

After photograph selection and pairing, the Pictures of Facial Affect were placed in two photo albums. For instruction sets 2 and 3, photographs were placed in slots side by side. For set 2, a single emotional word, typed on a label, was placed in the top center between the photographs. For set 3, each emotional word was placed in the top center of each photograph. The experimenter monitored selections so that 12 times the correct emotion was opposite the correct photograph and 12 times above the correct photograph. For set 1, a photograph was placed on the left slot. On the right side, two words were typed and presented vertically on labels. A response sheet was created for ease in scoring (see Appendix A).

Description of the Detailed Assessment of Posttraumatic Stress (DAPS). This 104-item self-report questionnaire is designed for individuals who have experienced a trauma (Briere, 2001). Respondents rate each item based on frequency of occurrence within the past month on a

five-point, Likert-type scale. The DAPS has four Trauma Specification Scales: Relative Trauma Exposure (RTE), Onset of Exposure (ONSET), Peritraumatic Distress (PDST), and Peritraumatic Dissociation (PDIS). In addition, the DAPS contains five Posttraumatic Stress Scales that correspond to *DSM-IV-TR* (APA, 2001) diagnostic criteria, Reexperiencing (RE), Avoidance (AV), Hyperarousal (AR), Post-traumatic Stress-Total (PTS-T), and Posttraumatic Impairment (IMP), as well as three Associated Features Scales, Trauma-Specific Dissociation (T-DIS), Substance Abuse (SUB), and Suicidality (SUI). The two validity scales are Positive Bias (PB) and Negative Bias (NB). The trauma scales were normed using a trauma-positive sample of over 400 individuals from the general population. Briere's (2001) development and validation studies indicate that the DAPS is a psychometrically sound assessment.

Description of the Miller Forensic Assessment of Symptoms Test (M-FAST). This brief, structured interview contains 25 items and is designed to detect malingering by assessment of an individual's general response style. The M-FAST contains seven subscale scores and an overall total score. The seven subscales are based on strategies used to detect malingerers: reported versus observed symptoms, extreme symptoms, rare combinations, unusual hallucinations, unusual symptom course, negative image, and suggestibility. A cut-off total score of six has been used to suggest dishonest responding, and research using the M-FAST has found this cut score to be most effective (Miller, Guy, & Davila, 2000; Miller, 2001).

Description of the PTSD Checklist-Civilian Version (PCL: CV). The PCL: CV is a 17-item self-report rating scale that is based on diagnostic criteria B, C, and D of the *DSM-IV* for posttraumatic stress disorder (Ruggiero, Del Ben, Scotti, & Rabalais, 2003). Individuals report the level of stress experienced with each reported PTSD symptom within the past 30 days. A five-point, Likert-type scale is used, with responses ranging from "not at all" to "extremely." The PCL: CV has been found to be psychometrically sound, with high internal consistency, test-retest

reliability, convergent validity, and discriminant validity (Ruggiero et al., 2003).

Procedure

A sign-up sheet for volunteers from psychology classes was posted in the first floor lobby of the Life Sciences Building. Time slots were posted on the sheet, and individuals were asked to go to Room 1317 during the specified time. First, all students were presented with an informed consent letter and HIPPA waiver of PHI information. Then, the participant completed the Detailed Assessment of Posttraumatic Stress (DAPS). A research assistant, using a prepared template, calculated a Posttraumatic Stress Total subscale score. They were then assigned to one of four groups based on Briere's (2001) numerical classification cutoff scores: (1) high, clinical PTSD (PTS-T raw score of 59 or higher), (2) moderate, subclinical PTSD (PTS-T raw score between 37 and 58), (3) honest controls (PTS-T raw score 36 or lower), and (4) coached malingerers (PTS-T raw score 36 or lower). The cutoff score for the negative bias (NB) validity scale was also used (Briere, 2001). Scores of 12 and above were considered invalid and omitted from the study. Elevated positive bias (PB) subscale scores were not considered for the present study because if PTS-T scores were elevated, and responses seemed to indicate a tendency to minimize problems, the participant would still clearly qualify as positive for PTSD. No participants from the clinical PTSD group scored above the clinical cutoff score of 7 which indicates positively biased responding. A total of 6 participants from the subclinical PTSD group (14.6%) obtained slightly elevated positive bias scores (n = 4, score of 8; n = 2, score of 7). For individuals whose PTS-T scores were not elevated, neither validity scale was considered; however, seven participants from the honest controls (17.9%) and two participants from the malingerers (4.8%) obtained slightly elevated positive bias scores; although, no one scored above an 8.

If scores did not indicate the possible presence of PTSD, participants were randomly

assigned to either an honest control group or a coached malingering group by flipping a coin. Each participant was given a folder with a set of instructions on how to complete the remaining assessments, either in an honest way, or as if simulating PTSD from a motor vehicle accident for a civil suit involving large sums of money for compensatory damages. Based on findings by Rogers and Cruise (1998) that context and incentive affect malingering performance, a context-specific scenario involving a motor vehicle accident was given to each participant in order to ensure a uniform set for PTSD malingering (see Appendix B). In addition to these instructions, participants were told that anyone who avoided detection of malingering on both of the assessments (MENT-R and M-FAST) and received a clinically elevated score on the PCL: CV would receive a $25.00 reward. This reward was used in order to provide a positive incentive for individuals to give their best effort at malingering. After the instructions, the coached malingering group also received a description of PTSD diagnostic criteria taken from an Internet web site and an explanation of secondary gains (monetary compensation) that could result if an individual successfully faked PTSD. Participants were told to read carefully and remember this information. The instructions for the honest control group and for individuals with either clinical or subclinical levels of PTSD were uniform (see Appendix C) and asked for all remaining assessments to be completed honestly. In order for all participants to spend an approximately equal amount of time before completing the remaining assessments, participants in groups 1-3 were given information on possible careers in the field of psychology as filler reading material.

After approximately 10 minutes reading the filler material or the PTSD symptom information (group 4), a ten question, true/false quiz was given to all participants on PTSD symptoms. A final multiple-choice question at the end of the quiz asked participants how they were instructed to respond, either (a.) honestly, or (b.) as though faking PTSD. This was to ensure that participants were aware of how they were to respond to the remaining assessments.

For students in the simulated malingering group, the quiz was given in order to ensure comprehension of the criteria. Individuals who failed the quiz would have received the information additional times for remediation until a passing score of 80% was obtained; however, no one in the malingering group failed the quiz after the first attempt. The quiz scores for participants in groups 1-3 were not considered.

After completion of the quiz, each participant was reminded verbally about how they were instructed to respond. Then, each participant was taken to another room where a different examiner was masked to group condition. A research assistant or the experimenter first administered the M-FAST and the MENT-R in counter-balanced order to participants. Then, the participant was asked to complete the PCL: CV and a post-participation questionnaire created by the experimenter (see Appendix D). This questionnaire obtained demographic information from participants as well as assessed for comprehension of one's role (i.e., did you understand the instructions), inquired about the credibility, or believability, of the MENT-R, and obtained information regarding any history of trauma(s), treatment received, and involvement in litigation due to trauma(s). While the participant was completing these assessment measures, the research assistant administering the DAPS finished scoring all subscales. Any participant who was assigned to the clinical or subclinical PTSD group received a list of local mental health resources upon completion of the study. Participants who had elevated scores on the subscales of suicidality or substance abuse, regardless of PTS-T score, also received a list of local mental health resources before leaving.

Results

Preliminary Analyses

Participants were screened using the Detailed Assessment of Posttraumatic Stress (DAPS). In addition to receiving a Posttraumatic Stress Total Score (PTS-T) on the DAPS,

participants' subscale scores were examined for elevations that would indicate a *DSM-IV-TR* diagnosis of PTSD. This criteria, based on DAPS guidelines, included endorsement of a trauma that occurred more than one month ago, feelings of fear, helplessness, or horror rated greater than 2 (a little), at least one of the Impairment items rated greater than 2 (less than once a week), an Arousal subscale score of 20 or greater, a Re-experiencing subscale score of 15 or greater, and an Avoidance subscale score of 20 or greater. Of the participants from the clinical PTSD group (n = 24) (DAPS PTS-T raw score of 59 or higher), 13 met full *DSM-IV-TR* criteria for PTSD. The type and number of traumas experienced by all 24 participants from this group included sexual assault (n = 5), motor vehicle accident (MVA) (n = 5), threatened harm (n = 4), violence, including assault and being shot at (n = 4), child sexual assault (n = 3) witnessing a trauma, including an MVA and father's death (n = 2), and child physical abuse (n = 1). None of the participants in the subclinical PTSD group (n = 41) met diagnostic criteria for PTSD; however, the type and number of traumas included MVA (n = 17), witnessing a trauma (n = 9), child sexual assault (n = 3), threatened harm (n = 3), sexual assault (n = 2), natural disaster (n = 1), violence (n = 1), and other (n = 5).

Eight participants from the clinical PTSD group and 1 participant from the subclinical PTSD group reported that they had received psychiatric treatment as a result of the trauma. In addition, 5 participants from the clinical PTSD group had been involved in some type of litigation as a result of experiencing the trauma, 2 of which reported current involvement. One participant from the subclinical PTSD group and 1 participant from the honest control group also reported past involvement in litigation as a result of a trauma.

Major Analyses

Total Scores for the MENT-R, M-FAST, and PCL: CV are summarized in Table 2. A one-way analysis of variance was conducted to examine group differences on the MENT-R Total

Score. A significant effect was found, $F(3, 144) = 21.439$, $p < .001$, with strength of effect, as measured by eta-squared, of .313. Post hoc analyses (Tukey honestly significant different test) revealed that the clinical PTSD group ($M = 2.71$, $SD = 2.58$), subclinical PTSD group ($M = 2.95$, $SD = 2.19$), and honest control group ($M = 3.28$, $SD = 2.70$) scored significantly lower on the MENT-R than did the malingering group ($M = 17.41$, $SD = 17.85$). Thus, the malingerers made significantly more errors on the MENT-R than did the other groups responding honestly. No differences were found among the three groups instructed to respond honestly on the MENT-R Total Score (see Figure 1).

A one-way analysis of variance comparing means of the groups on the M-FAST Total Score revealed significant differences among groups as well, $F(3, 144) = 70.018$, $p < .001$. The strength of this effect, as measured by eta-squared, was .598. A Tukey honestly significant difference test (HSD) for post hoc comparisons was performed and indicated that the clinical PTSD group ($M = 2.63$, $SD = 2.26$), subclinical PTSD group ($M = 1.63$, $SD = 1.62$), and honest control group ($M = 1.20$, $SD = 1.30$) scored significantly lower on the M-FAST than did the malingering group ($M = 9.88$, $SD = 5.13$). Thus, the malingerers received significantly higher scores on the M-FAST, as well as on the MENT-R, than did the other groups responding honestly. No differences were found among the three groups instructed to respond honestly on the M-FAST Total Score (see Figure 2).

The PTSD Checklist-Civilian Version is not an assessment for malingering. The Total Score represents the severity of posttraumatic stress that a person is presently experiencing. However, scores on this measure were analyzed in order to compare scores among groups and analyze the scores of participants instructed to malinger. A one-way analysis of variance comparing mean Total Scores among groups on the PCL: CV found a significant difference among groups, $F(3, 144) = 206.595$, $p < .001$. The strength of this effect, as measured by eta-

squared, was .815. A Tukey honestly significant difference test (HSD) for post hoc comparisons was performed and indicated that the malingering group scored significantly higher (M = 67.46, SD = 11.07) than the three groups instructed to respond honestly: the clinical PTSD group (M = 40.79, SD = 10.41), subclinical PTSD group (M = 25.63, SD = 6.19), and honest control group (M = 24.08, SD = 7.74). The clinical PTSD group's scores also were significantly different from the other groups, while no differences were found between the scores of the subclinical PTSD group and the honest control group without PTSD.

Malingering Detection Rates

Analyses were conducted to determine the ability of the MENT-R and M-FAST separately to detect malingering (see Table 3). Morel's (1998) suggested cut score of 9 was first examined with the MENT-R; scores less than 9 were considered valid responding. This MENT-R score (total errors) detected 56% of the coached malingerers, indicating a moderate level of sensitivity. Only one clinical PTSD participant scored greater than 9, yielding a false positive rate of 4.1%, or a specificity of 95.9%. Only one subclinical PTSD participant scored greater than 9; two honest controls scored above the cutoff score of 9. In order to increase sensitivity of the MENT-R, a cutoff score of 7 was explored, meaning that scores less than 7 were considered valid. This MENT-R score (total errors) detected 63% of the coached malingerers and generated a false positive rate of 8.3% (91.7% specificity) using the clinical PTSD group as a comparison. One additional subclinical PTSD participant was included in this false positive group (total of 2 false positives), and one additional participant from the honest control group was added (total of 3 false positives) when using the MENT-R cutoff score of 7.

For the M-FAST, Miller's (2001) suggested cutoff score of six was used to detect malingering. Scores greater than five were considered to be indicative of deceptive responding. This M-FAST Total Score detected 78% of coached malingerers (sensitivity). Five of the clinical

PTSD participants obtained M-FAST scores of six or greater, yielding a false positive rate of 20.8% (79.2% specificity). No participants in the subclinical PTSD group or honest control group scored greater than five on the M-FAST.

Rogers and Bender (2003) suggest that clinicians should rarely, if ever, conclude malingering based on only one index. Therefore, the combined ability of the MENT-R and M-FAST to detect malingered PTSD must be examined (see Table 4). Successful malingering was defined and analyzed in two different ways for the present study. Scoring below a 7 on the MENT-R (below the present article's suggested cutoff) as well as scoring below a 6 on the M-FAST (Miller, 2001) was first analyzed in terms of how many individuals successfully malingered. A total of 36.5% of coached malingerers were not detected on the MENT-R alone, and 22% of coached malingerers avoided detection on the M-FAST. However, only 4 of the coached malingerers (9.75% of the malingering group) were classified as successful malingerers using the combined criteria, yielding a detection rate of 90.25%. All 4 were female participants.

Prior to collecting data, successful malingering was defined as scoring below a 9 on the MENT-R, scoring below a 6 on the M-FAST, and scoring in the clinically elevated range of the PCL: CV (Total score of 44 or greater). The addition of positive endorsement of PTSD symptoms as criteria to the participant failing to endorse bogus symptomology most closely represents a typical battery of assessments given in a clinical forensic setting. Again, only four participants (the same four individuals) in the coached malingering group (9.25%) met the pre-determined criteria for successful malingering.

Predictive Ability of the MENT-R on M-FAST scores

A hierarchical regression was performed to determine the contribution of MENT-R scores (number of errors) in predicting M-FAST total scores controlling for age and gender effects. MENT-R total scores were found to contribute to the prediction of M-FAST scores and

accounted for 22.4% of the variance, $F(3, 144) = 18.34$, $p < .001$. The variables of age and gender were not significantly related to the prediction of M-FAST scores.

Additional Analyses

To determine the "believability" of the MENT-R instructions, a post-assessment participant question asked participants to rate how believable the statement "some individuals with PTSD have difficulty recognizing facial expressions of emotion" was on a scale of 0 (not at all believable) to 4 (very believable) with varying degrees of believability represented by numbers 1 through 3. This statement was embedded between ratings of believability of actual PTSD symptoms (presence of nightmares and startle responses) in order to mask the importance of the MENT-R statement. The overall group mean ($M = 2.9$, $SD = 1.06$) indicated that most participants thought that it was "somewhat believable". When examining the group of coached malingerers separately, a slightly lower mean was found ($M = 2.51$, $SD = .90$).

Although differences in mean M-FAST scores among the three groups responding honestly (clinical PTSD, subclinical PTSD, and honest controls) were not significant, the clinical PTSD group, on average ($M = 2.63$, $SD = 2.26$), produced higher M-FAST scores than either the subclinical PTSD group ($M = 1.63$, $SD = 1.62$) or the honest control group ($M = 1.20$, $SD = 1.30$). An item analysis was performed, and the following items were the most frequently endorsed by individuals in the clinical PTSD group (5 endorsements or greater): I often find myself not being able to sit still in a chair ($n = 6$); I feel depressed most of the time ($n = 5$); Some days I have major mood swings, where for a while I feel great and then I feel depressed. This always/sometimes happens when [I] believe someone is after [me] ($n = 7$); I feel unusually happy most of the time ($n = 6$); Sometimes it seems as though somebody controls my symptoms, turning them on and off, so I don't know how I'll feel most days ($n = 7$); The time when [I] can't go to sleep, [I] often smell strange odors that aren't really there ($n = 7$); On many occasions, I

feel things crawling on me when there is nothing there (n = 7).

Discussion

As hypothesized, total scores on the MENT-R distinguished among the four groups of participants, with malingerers making significantly more errors. Those responding honestly averaged fewer than 3.5 errors, while malingerers on average missed over 5 times that number. Overall scores on the M-FAST were also higher for the group of participants malingering. However, scores on the MENT-R and M-FAST for the clinical PTSD group, the subclinical PTSD group, and the honest control group with no PTSD did not differ significantly, lending further support for the use of these assessments in classifying individuals as malingering PTSD. Although the MENT-R and M-FAST correctly identified 63% and 78% of coached malingerers respectively, the combined use of both measures resulted in the correct classification of over 90% of the participants instructed to malinger PTSD.

Examining the performance of the malingering group on the MENT-R alone revealed that individuals obtained an extremely wide range of scores (number of errors), as evidenced by the large standard deviation. One possible explanation for this range of scores is that because participants read only a brief statement one time during test administration that suggests individuals with PTSD “may” have difficulty with the task, individuals simply missed or skimmed over this point in anticipation of task performance. Another explanation is that some participants, in the context of their involvement in a research study, did not believe the veracity of the statement. Mean ratings for the believability of the statement were slightly lower in the malingering group, the only participants alert to the possibility of malingering detection. A clinical forensic setting may not include this context of dubiousness, in which case individuals may not be aware of tests designed specifically to detect malingering. Despite the large variance in MENT-R scores, sensitivity and specificity rates (particularly with a revised cutoff score of 7)

indicate that the MENT-R is moderately useful in classifying participants as malingerers, with the correct classification of two-thirds of individuals instructed to malinger and correct classification of honest responders with clinical levels of PTSD in 91.7% of the cases.

The more extensively studied M-FAST (Miller, 2001) appears to remain a solid tool for identifying deceptive response styles of psychiatric illness (sensitivity = 78%, specificity = 79.2%). Contrary to the present study's hypotheses, PTSD positive groups (both clinical and subclinical) and malingerers did obtain significantly different scores on the M-FAST. The comorbidity of other disorders with PTSD did not affect the ability of the M-FAST to distinguish between honest and deceptive responding. Item analysis revealed that participants with clinical levels of PTSD endorsed statements primarily concerning mood, feelings of being out of control, trouble sleeping, and unusual sensory experiences at least on some occasions. Due to common comorbidity with depression, endorsement of feelings of depression, unexplained happiness, and mood swings are not surprising for individuals with PTSD, as is feeling as if someone else is controlling their symptoms (vulnerability, loss of control). Endorsement of difficulty sitting still in a chair and trouble sleeping could likely be indicative of physiological arousal associated with PTSD, as could the sensory experience of feeling things crawling on them.

Also contrary to previous hypotheses, MENT-R scores contributed to the prediction of M-FAST scores, suggesting that both measures are identifying a similar construct, most likely that of deceptive response style. As Morel (1998) indicated in his discussion of the correlation between high MENT scores and high *F – K* index scores on the MMPI-2, this finding is not indicative of a redundancy between the two assessments. Like the *F – K* index scores, the M-FAST is a measure of general response styles and was designed to identify malingering of psychosis. The MENT-R, like the MENT, is designed with the specific intent of identifying individuals who are attempting to fake symptoms of PTSD. The M-FAST can be applied to a

broad range of clinical concerns regarding malingering. Due to the solid sensitivity and specificity evidenced in the present study, the authors suggest that the M-FAST currently be classified as a “silver standard” assessment with potential for becoming a “gold standard” screening instrument pending further validation studies within a variety of populations, disorders, and settings.

The PTSD Checklist-Civilian Version (PCL: CV) is not designed to detect deceptive responding. However, the finding that the participants instructed to malinger PTSD scored significantly higher, on average, than the group of clinical PTSD participants lends further evidence for the necessity of using clinical assessments designed for the purpose of detecting malingering (Rogers & Bender, 2003). Very little variance was found within groups, and mean differences in scores were large, yielding a strong effect size. Comparing the subclinical PTSD group with the honest controls resulted in an additional interesting finding in that these two groups did not differ on PCL: CV scores. A valid DAPS score of 37 to 59 classified an individual as having subclinical PTSD. One explanation for this lack of difference is that the PCL: CV is designed to assess severity of current PTSD symptoms. These individuals did not endorse the presence of severe impairment or distress on the DAPS despite the presence of a trauma and remaining “subclinical” levels of symptoms; therefore, a lower PCL: CV score should be expected and does not contradict the DAPS score. This finding also supports the investigator’s decision to separate the clinical groups.

In addition to the strong and promising findings of the present study, several limitations are necessary to mention. First, as Rogers and Bender (2003) indicate for all simulation designs, generalization is somewhat limited due to the use of individuals instructed to malinger PTSD rather than a known comparison group of suspected malingerers. Based on findings and suggestions from previous simulation studies (Rogers, 1997; Rogers & Cruise, 1998), steps were

taken directed at the simulators to increase the study's external validity, such as the use of a monetary incentive, uniform instructions for malingerers, a description of a specific MVA scenario with which to base one's simulation, adequate preparation time to study symptoms of PTSD from an Internet source easily accessible to the general public, pre-determined requirements for passing a quiz on PTSD symptoms to ensure attention to coaching materials, debriefing regarding the believability of the MENT-R instructions, and a pre- and post-check on comprehension of and adherence to the instructions to fake responses on the assessments in question. However, the use of a positive external incentive could also be seen as a limitation of the study. Rogers and Cruise (1998) found that simulators were more focused (more successful) when negative incentives, such as failing to receive class credit or displaying names of "bad" (unsuccessful) malingerers publicly, were used. Ethical considerations limit the use of such incentives, however. The use of a delayed $25.00 incentive may have decreased motivation for participants as well. Further research is needed utilizing negative incentives, as well as larger, more salient positive incentives that more closely match the incentives for malingering in forensic settings, such as monetary rewards in tort litigation, reduced sentences in criminal trials, or disability payments.

As well as taking steps to increase external validity for the simulation design, a clinical comparison group was used, following Roger's (1997) emphasis on the necessity of this comparison group, with over half meeting full criteria for PTSD. The criterion measure for inclusion in this group, the Detailed Assessment of Posttraumatic Stress (DAPS; Briere, 2001), also contains validity scales to assess response style; fourteen participants were excluded from the study in spite of obtaining clinically elevated Posttraumatic Stress Total (PTS-T) subscale scores due to elevated Negative Bias subscale scores, suggesting accuracy in identification of a true clinical group. However, a possible limitation of the current study is failure to consider the

Positive Bias subscale in that a total of 9 participants classified as not having PTSD, and subsequently placed in either the honest control group or malingering group, could potentially have minimized PTSD symptoms. The participants' mild elevations on this subscale and low overall Posttraumatic Stress Total (PTS-T) subscale scores do not indicate that misclassification occurred. Further validation studies are needed for the DAPS validity scales due to its recent publication. The use of a known-comparison group of suspected malingerers, as Morel (1998) used for the MENT, would also greatly enhance the external validation of the MENT-R.

A further limitation to the generalizability of the study is the use of a relatively homogeneous sample of college students. Over three-fourths of the participants included in the study were Caucasian. Most of the individuals were around 19 years old, and almost 80% were female. Within the clinical PTSD group, only two participants were male. Gender prevalence rates indicate that women are twice as likely as men to develop PTSD (Blanchard & Hickling, 2004); therefore, greater numbers of females in the clinical PTSD group were to be expected. This statistic, combined with the much higher percentage of females who signed up to participate in the research study regardless of group placement, likely contributed to the low number of male participants in the clinical PTSD group. A more heterogeneous sample, including a larger number of males in the clinical PTSD group, may impact performance on the MENT-R and M-FAST. The malingering group, which was determined randomly by flipping a coin, contained the most equal number of males (36.6%) and females (63.4%), indicating that the inclusion of more males in this group is not likely to impact the results. An interesting finding that warrants further study is that all of the successful malingerers were female. When considering the greater number of females participating overall in the study, this number may not seem significant. However, the malingering group had a more equal distribution of males and females than the other groups, suggesting that males statistically should have had a better chance (approximately equal to the

chance of females) for successfully malingering. Studies comparing the performance of males versus females on a variety of malingering assessments and with known-groups as well as simulation designs are needed.

Use of coaching materials in the form of Internet pages describing symptoms of PTSD is realistic and ecologically valid; however, this level of coaching is at the low end of the coaching continuum. More intense coaching could include a lecture format (similar to coaching directly from an attorney). Wetter and Corrigan (1995) found that almost 50% of attorneys and over 33% of law students believe that it is necessary to inform clients about validity scales on psychological tests, suggesting that individuals claiming PTSD in a legal context could receive extensive coaching prior to the administration of psychological tests. Other forms of coaching that could be used consist of allowing participants to spend multiple days conducting their own research on the disorder in their own time, coaching on more specific and detailed aspect of PTSD symptoms, or coaching on validity scales in addition to symptom coaching, such as Guriel et al. (2004) examined with the M-FAST and TSI. All of these variations of coaching would be beneficial for additional exploration of the usefulness of the MENT-R and M-FAST.

As mentioned previously, the MENT-R instructions provide only one statement at the beginning of the assessment stating, “Some individuals with posttraumatic stress disorder (PTSD) may have difficulty recognizing facial expressions.” Further studies examining variations of the frequency and wording of this instruction may demonstrate differences among the performance of malingerers, making it a more salient aspect of the assessment.

The results of this study suggest that the MENT-R and the M-FAST are each moderately useful assessments in classifying individuals as either honest responders or malingerers. However, participants instructed to malinger posttraumatic stress disorder (PTSD) were identified as deceptive responders in 91.25% of the cases with the combined use of the Morel

Emotional Numbing Test-Revised (MENT-R) and the Miller Forensic Assessment of Symptoms Test (M-FAST). The use of both assessments to classify individuals as malingering was considerably more accurate than the use of either one measure or the other. This finding contributes to the steadily growing body of research supporting multimodal assessment of PTSD specifically and malingering in general (Guriel et al., 2004; Resnick, 1997; Rogers & Bender, 2003). Both measures are designed to detect deceptive response styles; however, the M-FAST utilizes a structured interview approach while the MENT-R uses a unique, forced-choice method of detection. Morel's (1998) decision to use this approach was based on empirically supported findings that "individuals who simulate impairment often perform above the random chance level but significantly below what would be expected of someone giving an honest effort" (p. 310). In addition to this detection strategy, the MENT-R employs the erroneous stereotype strategy as described by Rogers and Bender (2003).

This is the first replication of Morel's (1998) initial results, and as Morel proposed, extends the study to a different group and setting; in this case, a college population that includes coached malingerers as well as a clinical comparison group. Morel's (1998) study was extended and replicated with similar strong results, indicating the continued promise of this new assessment. Compared to the sensitivity and specificity of the MENT using a cut score of 9 with a sample of suspected malingerers (82% and 100% respectively), the present study demonstrated 63% sensitivity and 92% specificity using a cut score of 7 with coached malingerers in a simulation study. The strength of the effect for differences in mean error rates (Total Scores) on the MENT with Morel's (1998) six groups (.67) was slightly higher than the present study's strength of effect for differences in mean scores on the MENT-R among four groups (.313). Future research examining the effectiveness of the MENT-R could include a community sample of coached malingerers as well as suspected malingerers in various forensic settings, such as

forensic patients at psychiatric hospitals, disability claimants, and prisoners.

References

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text revision). Washington, DC: Author.

Blanchard, E. B., & Hickling, E. J. (2004). *After the crash: Psychological assessment and treatment of survivors of motor vehicle accidents*. (2nd ed.). Washington, DC: American Psychological Association.

Briere, J. (1995). *Trauma Symptom Inventory professional manual.* Odessa, FL: Psychological Assessment Resources.

Briere, J. (2001). *DAPS: Detailed Assessment of Posttraumatic Stress professional manual.* Odessa, FL: Psychological Assessment Resources.

Burges, C., & McMillan, T. M. (2001). Brief report: The ability of naïve participants to report symptoms of posttraumatic stress disorder. *British Journal of Clinical Psychology, 40,* 209-214.

Bury, A., S., & Bagby, R. M. (2002). The detection of feigned uncoached and coached posttraumatic stress disorder with the MMPI-2 in a sample of workplace accident victims. *Psychological Assessment, 14(4),* 472-484.

Calhoun, P. S., Earnst, K. S., Tucker, D. D., Kirby, A. C., & Beckham, J. C. (2000). Feigning combat-related posttraumatic stress disorder on the Personality Assessment Inventory. *Journal of Personality Assessment, 75,* 338-350.

Edens, J. F., Otto, R. K., & Dwyer, T. J. (1998). Susceptibility of the Trauma Symptom Inventory to malingering. *Journal of Personality Assessment, 71,* 379-392.

Ekman, P., & Friesen, W. V. (1976). *Pictures of facial affect* [Brochure]. San Francisco: Paul Ekman.

Fox, D. D., Gerson, A., & Lees-Haley, P. R. (1995). Interrelationship of MMPI-2 validity scales

in personal injury claims. *Journal of Clinical Psychology, 51,* 42-47.

Frueh, B. C., Gold, P. B., & de Arellano, M. A. (1997). Symptom overreporting in combat veterans evaluated for PTSD: Differentiation on the basis of compensation seeking status. *Journal of Personality Assessment, 68,* 369-384.

Frueh, B. C., Hamner, M. B., Cahill, S. P., Gold, P. B., & Hamlin, K. L. (2000). Apparent symptom overreporting in combat veterans evaluated for PTSD. *Clinical Psychology Review, 20(7),* 853-885.

Green, B. L., & Kaltman, S. I. (2003). Recent research findings on the diagnosis of PTSD: Prevalence, course, comorbidity, and risk. In R. I. Simon (Ed.), *Posttraumatic stress disorder in litigation* (pp. 19-40). Washington, DC: APA.

Groth-Marnat, G. (2003). *Handbook of psychological assessment* (4th ed.). Hoboken, New Jersey: John Wiley & Sons.

Guriel, J., & Fremouw, W. (2003). Assessing malingered posttraumatic stress disorder: A critical review. *Clinical Psychology Review, 23,* 881-904.

Guriel, J., Yanez, R., Fremouw, W., Shreve-Neiger, A., Ware, L., Filcheck, H., & Farr, C. (2004). Impact of coaching on malingered posttraumatic stress symptoms on the M-FAST and the TSI. *Journal of Forensic Psychology Practice, 4(2),* 37-56.

Guy, L. S., & Miller, H. A. (August, 2000). *The M-FAST's ability to detect malingering in a prison population.* Poster session presented at the 109th annual conference of the American Psychological Association, San Francisco, CA.

Hickling, E. J., Blanchard, E. B., Mundy, E., & Galovski, T. E. (2002). Detection of malingered MVA related posttraumatic stress disorder: An investigation of the ability to detect professional actors by experienced clincians, psychological tests and psychophysiological assessment. *Journal of Forensic Psychology Practice, 2(1),* 33-53.

Hickling, E. J., Taylor, A. E., Blanchard, E. B., & Devineni, T. (1999). Simulation of motor vehicle accident-related PTSD: Effects of coaching with DSM-IV criteria. In E. J. Hickling, & E. B. Blanchard (Eds.), *The international handbook of road traffic accidents and psychological trauma: Current understanding, treatment, and law* (pp. 305-320). New York: Elsevier.

Keane, T. M., Buckley, T. C., & Miller, M. W. (2003) In R. I. Simon (Ed.), *Posttraumatic stress disorder in litigation* (pp. 119-140). Washington, DC: APA.

Lanyon, R. I. (1997). Detecting deception: Current models and directions. *Clinical Psychology: Science and Practice, 4(4),* 377-387.

Lees-Haley, P. R. (1989). Malingering emotional distress on the SCL-90-R: Toxic exposure and cancerphobia. *Psychological Reports, 65,* 1203-1208.

Lees-Haley, P. R., & Dunn, J. T. (1994). The ability of naïve subjects to report symptoms of mild brain injury, post-traumatic stress disorder, major depression, and generalized anxiety disorder. *Journal of Clinical Psychology, 50,* 252-256.

Lewis, J. L, Simcox, A. M., & Berry, D. T. R. (2002). Screening for feigned psychiatric symptoms in a forensic sample by using the MMPI-2 and the Structured Inventory of Malingered Symptomatology. *Psychological Assessment, 14,* 170-176.

Liljequist, I., Kinder, B. N., & Schinka, J. A. (1998). An investigation of malingering posttraumatic stress disorder on the Personality Assessment Inventory. *Journal of Personality Assessment, 71,* 322-336.

Mayers, K. S. (1995). Faking it: Non-English speaking applicants for social security disability who falsify claims. *American Journal of Forensic Psychology, 13,* 31-46.

Miller, H., Guy, L. & Davila, M. (August, 2000). *Utility of the M-FAST: Detecting malingering with disability claimants.* Poster session presented at the 109th annual conference of the

American Psychological Association, San Francisco, CA.

Miller, H. (2001). *Manual for the Miller Forensic Assessment of Symptoms Test (M-FAST).* Odessa, FL: Psychological Assessment Resources.

Morel, K. R. (1998). Development and preliminary validation of a forced-choice test of response bias for posttraumatic stress disorder. *Journal of Personality Assessment, 70,* 299-314.

Resnick, P. J. (1997). Malingering of posttraumatic stress disorders. In R. Rogers (Ed.), *Clinical assessment of malingering and deception* (2nd ed.) (pp. 130-152). New York: Guilford Press.

Resnick, P. J. (2003). Guidelines for evaluation of malingering in PTSD. In R. I. Simon (Ed.), *Posttraumatic stress disorder in litigation* (pp. 187-206). Washington, DC: APA.

Rogers, R. (Ed.) (1997). *Clinical assessment of malingering and deception* (2nd ed.). New York: Guilford Press.

Rogers, R., & Bender, S. (2003). Evaluation of malingering and deception. In A. M. Goldstein & I. B. Weiner (Eds.), *Handbook of psychology* (pp. 109-129). New York: Wiley & Sons.

Rogers, R., & Cruise, K. R. (1998). Assessment of malingering with simulation designs: Threats to external validity. *Law and Human Behavior, 22,* 273-285.

Rogers, R., Kropp, P. R., Bagby, R. M., & Dickens, S. E. (1992). Faking specific disorders: A study of the Structured Interview of Reported Symptoms (SIRS). *Journal of Clinical Psychology, 48,* 643-648.

Rogers, R., & Salekin, R. T. (1998). Research report beguiled by Bayes: A re-analysis of Mossman and Hart's estimates of malingering. *Behavioral Sciences and the Law, 16,* 147-153.

Rogers, R., Sewell, K. W., & Goldstein, A. (1994). Explanatory model of malingering: A prototypical analysis. *Law and Human Behavior, 18,* 543-552.

Ruggerio, K. J., Del Ben, K., Scotti, J. R., & Rabalais, A. E. (2003). Psychometric properties of the PTSD Checklist—Civilian Version. *Journal of Traumatic Stress, 16,* 495-502.

Ruiz, M. A., Drake, E. B., Glass, A., Marcotte, D., & van Gorp, W. G. (2002). Trying to beat the system: Misuse of the Internet to assist in avoiding the detection of psychological symptom dissumulation. *Profession Psychology: Research and Practice, 33,* 394-299.

Scragg, P., Bor, R., & Mendham, M. (2000). Assessment: Feigning posttraumatic stress disorder on the PAI. *Clinical Psychology and Psychotherapy, 7,* 155-160.

Wetter, M. W., & Corrigan, S. K. (1995). Providing information to clients about psychological tests: A survey of attorneys' and law students' attitudes. *Professional Psychology: Research and Practice, 26*, 474-477.

Table 1

Demographic Characteristics of Participants by Group Classification

	Group Classification			
Variable	Clinical PTSD (n = 24) n %	Subclinical PTSD (n = 41) n %	Honest Controls (n = 39) n %	Malingerers (n = 41) n %
Race				
Caucasian	20 (83.3%)	35 (85.4%)	36 (92.3%)	36 (87.8%)
African Amer.	0	3 (7.3%)	0	3 (7.3%)
Asian	0	1 (2.4%)	0	1 (2.4%)
Hispanic	2 (8.3%)	2 (4.9%)	3 (7.7%)	1 (2.4%)
Native Amer.	1 (4.2%)	0	0	0
Other	1 (4.2%)	0	0	0
Gender				
Male	2 (8.3%)	7 (17.1%)	6 (15.4%)	15 (36.6%)
Female	22 (91.7%)	34 (82.9%)	33 (84.6%)	26 (63.4%)
Age				
17	0	0	1 (2.6%)	1 (2.4%)
18	13 (54.2%)	15 (36.6%)	13 (33.3%)	17 (41.5%)
19	3 (12.5%)	19 (46.3%)	13 (33.3%)	9 (22.0%)
20	6 (25.0%)	2 (4.9%)	5 (12.8%)	7 (17.1%)
21	1 (4.2%)	2 (4.9%)	4 (10.3%)	4 (9.8%)
22	0	0	1 (2.6%)	2 (4.9%)

23	1 (4.2%)	0	1 (2.6%)	0
24	0	1 (2.4%)	1 (2.6%)	0
25	0	0	0	0
26	0	0	0	1 (2.4%)
31	0	1 (2.4%)	0	0
45	0	1 (2.4%)	0	0
School Year				
Freshman	14 (58.3%)	17 (41.5%)	22 (56.4%)	20 (48.8%)
Sophomore	6 (25.0%)	18 (43.9%)	8 (20.5%)	12 (29.3%)
Junior	3 (12.5%)	4 (9.8%)	5 (12.8%)	5 (12.2%)
Senior	0	1 (2.4%)	3 (7.7%)	3 (7.3%)
5^{th} Year or More	1 (4.2%)	1 (2.4%)	1 (2.6%)	1 (2.4%)

Note. Abbreviation Amer. = American

Table 2

MENT-R, M-FAST, and PCL: CV Total Scores Across Group Conditions

	Clinical PTSD (n = 24)	Subclinical PTSD (n = 41)	Honest Controls (n = 39)	Malingerers (n = 41)		
Scale	Mean SD	Mean SD	Mean SD	Mean SD	*F*(3, 144)	Eta squared
MENT-R	2.71[a] (2.58)	2.95[a] (2.19)	3.28[a] (2.70)	17.41[b] (17.85)	21.44***	.313
M-FAST	2.63[a] (2.26)	1.63[a] (1.62)	1.20[a] (1.30)	9.88[b] (5.13)	70.02***	.598
PCL: CV	40.79[a](10.42)	25.63[b] (6.18)	24.08[b](7.74)	67.46[c] (11.07)	206.60***	.815

Note. MENT-R = Morel Emotional Numbing Test-Revised; M-FAST = Miller Forensic Assessment of Symptoms Test; PCL = PTSD Checklist: Civilian Version. Means in the same row that do not share superscripts differ at $p < .001$ in the Tukey honestly significant difference comparison. *** = $p < .001$

Table 3

Sensitivity and Specificity Rates of the MENT-R and M-FAST Total Scores

Measures	Sensitivity	Specificity
MENT-R Cutoff Scores		
9	56%	96%
7	63%	92%
M-FAST Cutoff Score		
6	78%	79%

Note. Sensitivity rates were calculated by determining the percentage of participants from the malingering group scoring below the cutoff score. Specificity rates were calculated by determining the percentage of participants from the clinical PTSD group scoring above the cutoff score.

Table 4

Percentage of Successful Malingerers

Group	MENT-R (< 7)	M-FAST (< 6)	MENT-R & M-FAST
Malingerers	36.5%	22%	9.75%

Figure Captions

Figure 1. Mean Total Scores (number of errors) on the Morel Emotional Numbing Test-Revised by group classification. The brackets denote the full range of scores. The (*) represents outlying subjects.

Figure 2. Mean Total Scores on the Miller Forensic Assessment of Symptoms Test (M-FAST) by group classification. The brackets denote the full range of scores.

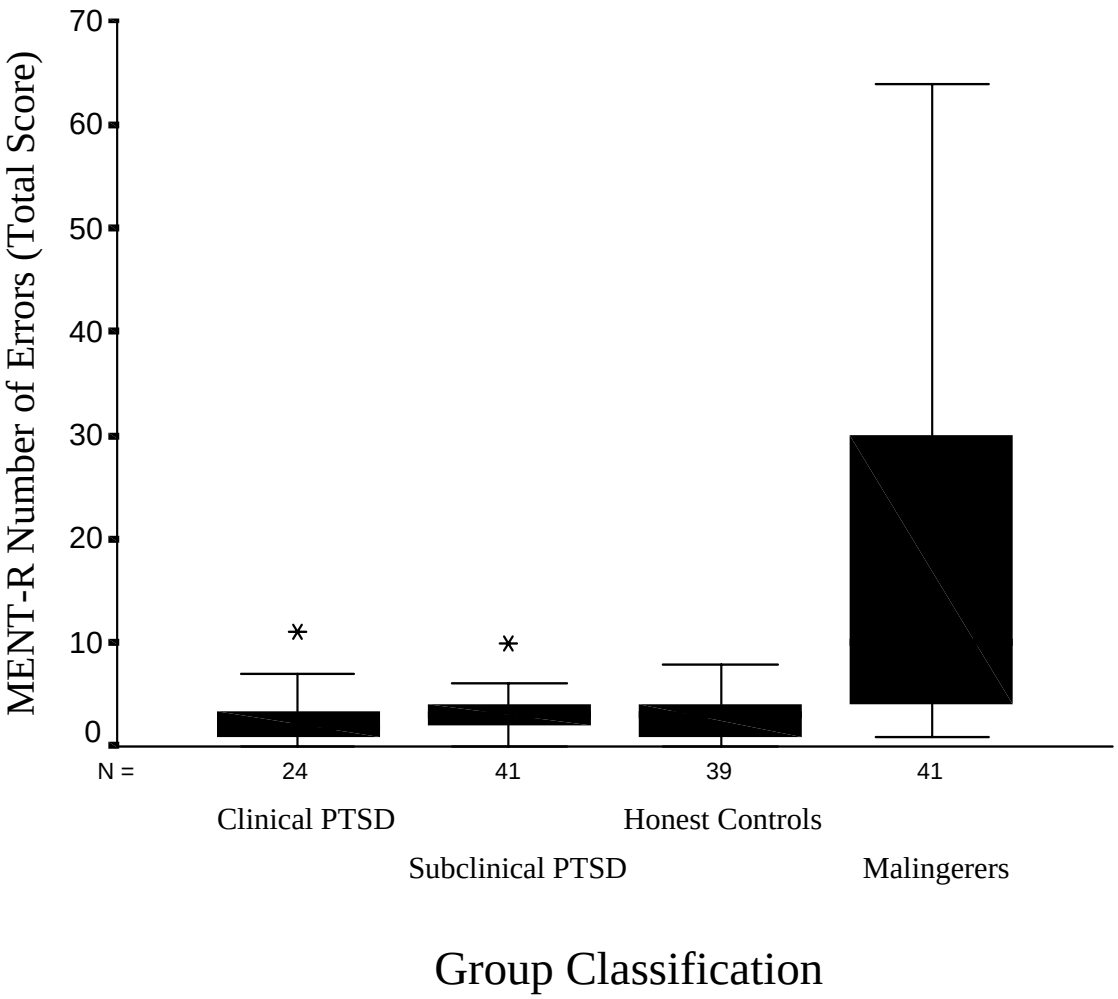
MENT-R Number of Errors (Total Score)
70
60
50
40
30
20
10
0
N =
24
41
39
41
Clinical PTSD
Subclinical PTSD
Honest Controls
Malingerers
Group Classification

Figure 1

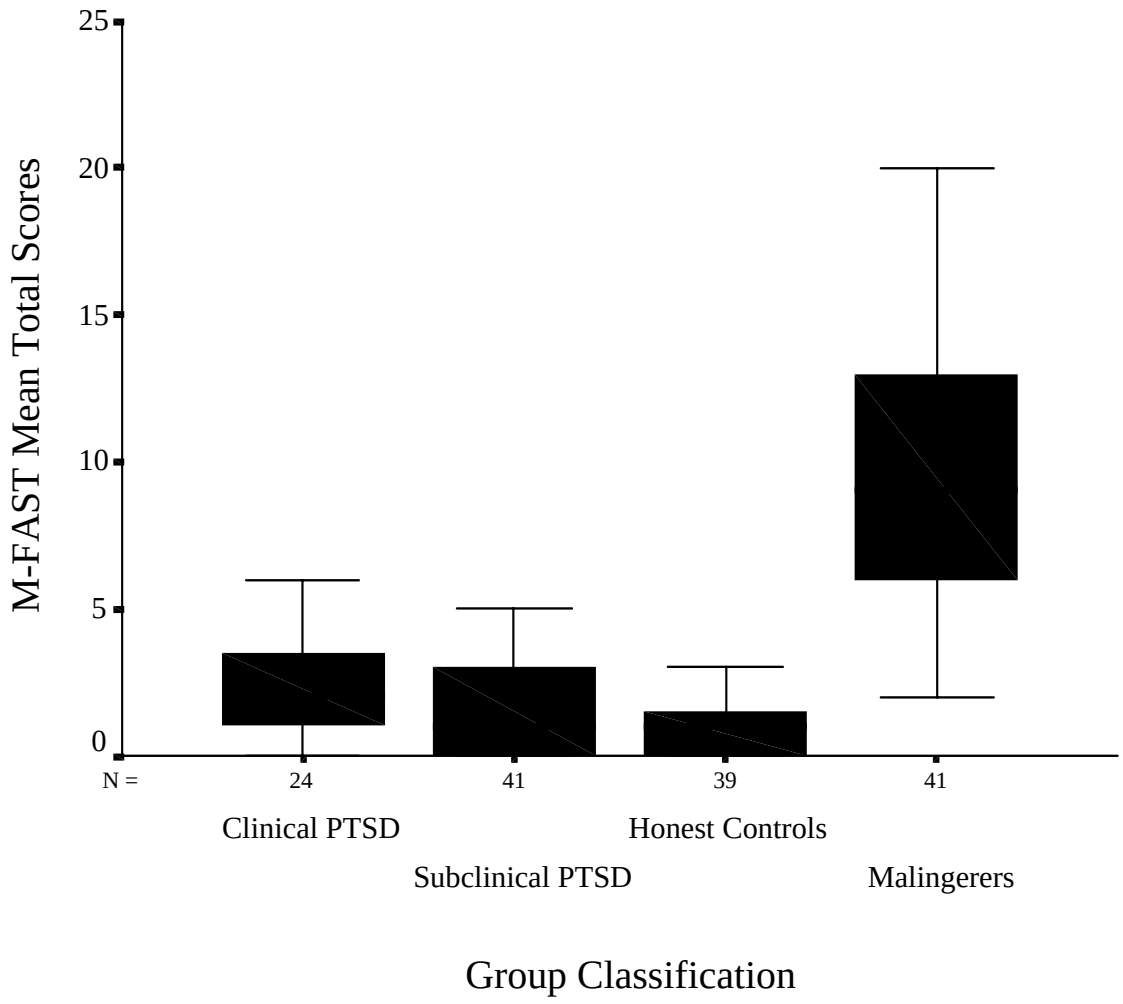
M-FAST Mean Total Scores
25
20
15
10
5
0
N =
24
41
39
41
Clinical PTSD
Subclinical PTSD
Honest Controls
Malingerers
Group Classification

Figure 2

Appendix A

MENT-R Response Sheet

Set 1:

1. A B	7, A B	13, A B	19. A B
2, A B	8. A B	14, A B	20, A B
3. A B	9, A B	15. A B	21, A B
4. A B	10, A B	16. A B	22. A B
5, A B	11. A B	17. A B	23. A B
6. A B	12, A B	18, A B	24, A B

Set 1 Missed _____ / 24

Set 2:

1. A B	7. A B	13. A B	19. A B
2, A B	8. A B	14. A B	20, A B
3, A B	9. A B	15. A B	21. A B
4, A B	10, A B	16, A B	22. A B
5. A B	11, A B	17, A B	23, A B
6, A B	12, A B	18. A B	24, A B

Set 2 Missed _____ / 24

Set 3:

1, Fear ____, Sad ____	9, Hap ____, Disg ____	17. Fear ____, Sur ____
2. Ang ____, Sur ____	10. Sad ____, Sur ____	18, Disg ____, Ang ____
3, Hap ____, Fear ____	11, Fear ____, Hap ____	19, Sur ____, Sad ____
4, Fear ____, Disg ____	12. Disg ____, Ang ____	20. Ang ____, Hap ____
5. Hap ____, Sad ____	13. Sad ____, Hap ____	21, Disg ____, Fear ____
6. Sur ____, Fear ____	14, Sur ____, Disg ____	22. Ang ____, Sur ____
7, Sad ____, Disg ____	15. Sad ____, Ang ____	23. Hap ____, Sur ____
8, Ang ____, Fear ____	16. Hap ____, Ang ____	24, Disg _____, Sad ____
Set 3 Missed _____ / 24		Total Missed _____ / 72

Appendix B

PTSD Motor Vehicle Accident Scenario
Simulated Malingering Group

Assume that you were recently involved in a motor vehicle accident in which you were hit broadside by another driver. You suffered a broken leg and fractured pelvis. The other driver's insurance company has already paid for the extensive repair work required for your car and all of your medical bills. You are now involved in civil litigation in which you could potentially receive up to $100,000.00 for your "pain and suffering." You do not really have pain and suffering. You know that it is possible to strengthen your case if you can successfully convince a forensic psychologist that you have Post Traumatic Stress Disorder (PTSD). Please carefully read the following information about symptoms of this mental illness. Memorize the information, as you will be quizzed in True/False format to ensure that you have learned the major symptoms.

Following this, you will be administered two psychological tests by a trained professional and given a brief self-report checklist. Based on what you have learned, complete the tests and checklist with the intent to fool or beat the tests and the interviewer so that you present as someone with PTSD, and thereby win a settlement in court. After you are done, we will tell you if you were successful at beating the tests.

Appendix C

Instructions

Please read the following brief articles on possible careers in the field of psychology. When you are finished, you will be given a True/False quiz on posttraumatic stress disorder (PTSD). You are not expected to know all of the answers. Just complete the quiz to the best of your ability.

After the PTSD quiz, a trained professional will administer two psychological tests and give you a brief self-report checklist and participant questionnaire. Answer all of the questions honestly, without exaggerating or minimizing any problems or symptoms.

Appendix D

Participant Questionnaire

1. Age: _____

2. Gender: A. Male
B. Female

3. Race: _____

4. Current Year Classification in School:
A. Freshman
B. Sophomore
C. Junior
D. Senior
E. 5th year

5. In what way were you **instructed** to respond to the assessments in the current study?
A. Honestly
B. As if pretending that I suffer from PTSD from a motor vehicle accident

6. In what way did you **actually respond** to the assessments in the current study (in other words, did you abide by the instructions)?
A. Honestly
B. As if pretending that I suffer from PTSD from a motor vehicle accident

7. Did you find it believable that individuals with PTSD have nightmares?

0 = Not at all believable
1 = Unsure
2 = Somewhat believable
3 = Mostly believable
4 = Very believable

8. Did you find the following statement from the instructions believable?

Instruction: "Some individuals with posttraumatic stress disorder (PTSD) may have difficulty recognizing facial expressions."

0 = Not at all believable
1 = Unsure
2 = Somewhat believable
3 = Mostly believable
4 = Very believable

9. Did you find it believable that individuals with PTSD are easily startled?

0 = Not at all believable
1 = Unsure
2 = Somewhat believable
3 = Mostly believable

4 = Very believable

10. In the first questionnaire, had you experienced any of the traumas listed?

A. Yes

B. No

If you answered no to this question, then you have completed this questionnaire.
If you answered yes, please respond to the following questions.

11. Have you received psychiatric treatment (such as seeing a counselor or psychologist) as a result of the trauma?

A. Yes

B. No

If yes, how many weeks of treatment? _____

12. When did the trauma occur? _____

13. As a result of the trauma, were you ever involved in litigation (in a civil or criminal trial)?

A. Yes

B. No

14. Are you currently involved in litigation as a result of a trauma?

A. Yes

B. No

CURRICULUM VITAE

Julia M. Strunk

PERSONAL DATA

Business Address: Psychology Department
West Virginia University
Life Sciences Building
PO Box 6040
Morgantown, WV 26506
e-mail: jstrunk@mix.wvu.edu

Permanent Address: 474 Winsley Street
Morgantown, WV 26501
Phone: 304-692-2758

Citizenship: United States

EDUCATIONAL HISTORY

Maryville College
Maryville, TN 37804

Major: Psychology
English with teacher licensure

Degree: BA, Magna Cum Laude, 1999

Honors: Presidential Scholarship
Robert C. Byrd Honors Scholarship
Kappa Delta Pi
Alpha Gamma Sigma

Awards: Alexander English Prize
David H. Briggs Award
Edwin R. Hunter Award for Excellence in Research in English or American Literature

Senior Thesis: Psychological Examination of Eyewitnesses in Melville's *Billy Budd* and Forster's *A Passage to India*

West Virginia University
Morgantown, WV 26505

Program: Adult Clinical Psychology

Track: Doctoral

Current status: 2nd year of program

TEACHING EXPERIENCE

English Teacher, Oak Ridge High School, Oak Ridge, TN
June 1999 – May 2003

Courses Taught: American Literature, American Studies, Freshman English, Advanced Freshman English, Writing Workshop
Supervisor: Ken Green

Graduate Instructor, West Virginia University, Morgantown, WV
August 2003 – May 2004

Courses Taught: Psychology 101
Supervisors: Jennifer Margrett, Ph.D and Cynthia Anderson, Ph.D

Graduate Teaching Assistant, West Virginia University, Morgantown, WV
August 2004 – December 2004

Dyad Instructor: Introduction to Clinical Psychology
Supervisor: Barry Edelstein, Ph.D.

Graduate Teaching Assistant, West Virginia University, Morgantown, WV
January 2005 – May 2005

Clinical Skills Check-Out : Adult Behavior Therapy
Supervisor: Daniel McNeil, Ph.D.

Guest Lecturer, Introduction to Abnormal Psychology, West Virginia University, Morgantown, WV
April 26, 2005

Presentation: Introduction to Forensic Psychology
Co-Lecturer with Elizabeth Tyner

PROFESSIONAL ORGANIZATIONS

American Psychological Association (APA), student member

American Psychology-Law Society, Division 41 of APA

PROFESSIONAL ACTIVITIES

Board of Directors, Maryville College Student Literacy Corps,
National Evaluator of Even Start grant program

Oral Presentation of Senior Thesis, May 6, 1999
Alpha Gamma Sigma program

Attended American Psychology-Law Society Conference, Scottsdale, AZ
March 4-7, 2004

Attended American Psychology-Law Society Conference, La Jolla, CA
March 3-6, 2005

Attended First Annual West Virginia Suicide Awareness and Prevention Conference, Charleston, WV
May 20-21, 2004

Attended Second Annual Mood and Anxiety Conference, West Virginia University School of Medicine: Understanding Bipolar Illness, Morgantown, WV
October 22, 2004

SCHOLARLY ACTIVITIES

Fremouw, W., **Strunk, J.**, Tyner, E., & Musick, R. (In press). *ASAP-20*. A guided clinical interview for adolescent suicide assessment. *Innovations in Clinical Practice*.

Yanez, Y. T., Fremouw, W., Tennant, J., **Strunk, J**., & Coker, K. (In submission). Effects of severe depression on TOMM performance among disability-seeking outpatients. *Archives of Clinical Neuropsychology*.

Fremouw, W., Johannson-Love, J., Tyner, E., & **Strunk, J**. (In press). Ethical/legal issues in adult assessment. In M. Hersen (Ed.), *Clinical handbook of behavioral assessment: Vol. 1, Adult assessment*. San Diego, CA: Elsevier Press.

Current Research:

- Use of clinical assessments to detect malingered PTSD
- Use of clinical assessments to detect malingered depression

• Adolescent suicide risk assessment

POSTERS AND PRESENTATIONS

Fremouw, W., Strunk, J., Tyner, E., & Musick, R. (2004) Adolescent suicide assessment protocol (ASAP-20). *West Virginia Department of Health and Human Resources*. Invited presentations given May 20-21 in Charleston, WV at state-wide suicide conference and September 22 in Weston, WV at state-wide mental health care workers training seminar.

Yanez, T., Fremouw, W., Tennant, J., Strunk, J., & Coker, K. (March 2004). *Effects of depression on tests of memory*. Poster presented at the Annual American Psychology-Law Society Conference, Scottsdale, AZ.

Coker, K., Strunk, J., Tyner, E., & Fremouw, W. (March 2005). *The ability of naïve versus clinical posttraumatic stress disorder (PTSD) participants to generate and identify symptoms of PTSD.* Poster accepted for presentation at the Annual American Psychology-Law Society Conference, La Jolla, California.

MANUSCRIPT REVIEWS

Utility of the Trauma Symptom Inventory in detecting malingered posttraumatic stress disorder. (2003). Submitted to *Psychological Assessment*. Reviewed with Dr. William Fremouw.

Prevalence risk factors and theoretical models of dating violence: Implications for prevention programs. (2005). Submitted to *Clinical Psychology Review*. Reviewed with Dr. William Fremouw.

CLINICAL EXPERIENCE

Co-Leader for Parent H.E.L.P. group, September 2003 – November 2003
Fairmont, WV, City County Building
Referrals from Child Protective Services (CPS)

Co-Leader for Anger Management Group (2 groups), February 2004 – April 2004
Quin Curtis Center, Psychology Department, West Virginia University
Referrals from judges, probation officers, and attorneys

Forensic Evaluations, September 2003 – June 2004
Dr. William Fremouw and Associates
Central Regional Jail
Types of Evaluations: disability claims, competency to stand trial, criminal responsibility, risk assessment, fitness of duty
Offenses: assault, sexual offenses, malicious wounding, theft

William R. Sharpe, Jr. Psychiatric Hospital, Forensic Unit, July 2004 – present
Weston, WV, Department of Health and Human Resources

PROFESSIONAL RESEARCH INTERESTS

Forensic psychology, malingering, coaching of malingering, suicide assessment, risk assessment, psychophysiology, health psychology